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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers	)	CC Docket No. 01-338

COMMENTS OF ILLUMINET, INC.

Illuminet, Inc, a VeriSign Company, hereby files its comments in response to the Commission's Notice of Proposed Rulemaking in this proceeding, released December 20, 2001, FCC 01-361 ("NPRM"). The NPRM implements the first triennial review of the Commission's policies on unbundled network elements ("UNEs"). Illuminet's comments will focus on the issues relating to access to signaling networks, databases and Operational Support Systems ("OSS").

I INTEREST OF ILLUMINET

A. Signaling and Data Base Questions Presented

The Commission found in the *UNE Remand Order* that carriers would be impaired without access to incumbents' signaling networks and call related data bases.[1] The NPRM asks whether changes in circumstances since the adoption of that order are such that the requirements

[1] *Implementation of the Local Competition Provisions of the Telecommunications Act of 1996,* Third Report and Order and Fourth Further Notice of Proposed Rulemaking, 15 FCC Rcd 3696, 3866 (1999) (*"UNE Remand Order"*).

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to provide unbundled access to these facilities should be retained, or modified. Parties are asked to comment on the benefits and burdens of continuing these requirements, and whether there are less burdensome alternatives. Comment is also requested on the deployment of alternative signaling systems and what type of data should be considered in determining whether carriers would continue to be impaired without access to signaling systems of Incumbent Local Exchange Carriers ("ILECs").[2]

B. . SS7 Networks Are Indispensable To the Rapid and Efficient Operation of the Public Switched Network

The availability of SS7 signaling services from diverse sources has facilitated the growth of competitive providers of telecommunications services. SS7 capability is an essential element of the provision of efficient basic voice and data service and the ability to provide advanced services necessary for any telecommunications carrier to compete in the marketplace. The SS7 network is used for basic call setup, management, and tear down; wireless roaming and mobile subscriber authentication; local number portability; toll free data base services; enhanced call features such as Custom Local Area Signaling Services ("CLASS") and other intelligent network database services such as Line Information Database ("LIDB"). SS7 messages are exchanged between SS7 network components over 56 or 64 kilobit per second bi-directional channel signaling links. Signaling occurs "out of band" on dedicated channels separate from the voice channels. Each signaling point in the SS7 network is uniquely identified by a numeric point code, which is carried in signaling messages to identify the source and destination of each message.

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2 NPRM, Paras 64-66.

In addition to the signaling links, SS7 Networks are composed of Service Control Points ("SCP"), Signal Transfer Points ("STP") and Service Switching Points ("SSP"). The SCP is a network database that stores call routing and call completion information. The STP's main function is to route, switch and address SS7 messages. SSPs are typically digital switches with SS7 messaging hardware and software that allows them to originate and terminate SS7 messages for call set-up and tear down and for accessing databases housed in an SCP. Illuminet does not itself own or operate SSPs, but its carrier-customers do. In addition, some carrier-customers own their own STPs. A diagram of the typical SS7 network configuration is attached as Appendix A.

C. Illuminet's SS7 Signaling Network

Illuminet brings to this proceeding a unique perspective with respect to the SS7-related UNE issues. As a non-common carrier third party provider of SS7 services to its carrier/customers, Illuminet does not compete with its carrier/customers for the end user voice and data traffic that the SS7-services support. Illuminet's services not only provide its carrier-customers economies of scale and scope for their SS7-related needs, but also allow the ILECs, including each of the Regional Bell Operating Companies ("RBOCs"), to benefit from the ability to exchange SS7-related signaling and functions with Illuminet's carrier-customers without the need or requirement to deploy duplicative network arrangements. Illuminet's carrier-customers likewise, have the ability to connect their SS7 network components directly to the RBOC SS7 networks, which imposes a market constraint on Illuminet.

Illuminet is the successor of an organization created over twenty years ago by independent telephone companies to maintain records of those companies related to billing for interexchange carriers. As the organization grew it expanded its clearinghouse and revenue administration

functions for telecommunications carriers. In 1989 a subsidiary was formed to develop and maintain an SS7 signaling network for independent companies. That network has grown to serve many other segments of the industry.

In late 2001, Illuminet became a wholly owned subsidiary of VeriSign, Inc., the leading provider of digital trust services, which include web presence services, security services, authentication services and payment services. Under contract from the United States government VeriSign operates the authoritative root server of the Internet domain name system, and maintains the exclusive "registry" of over 28.8 million Internet domain names in .com,. org, .net, .biz and .info. VeriSign enables people everywhere to communicate, to exchange sensitive documents and to engage in commerce with confidence. Digital trust services transform the Internet into a secure digital environment in which people can work and transact business safely and productively.

Illuminet's network mission is to provide its customers with cost-effective connectivity to the signaling networks of nearly the entire U.S. public-switched network infrastructure. This capability eliminates the time and expense of establishing signaling connections with multiple carriers. Illuminet's network provides its carrier-customers with economies of scale and scope because it successfully aggregates the demand for SS7 signaling of hundreds of carriers, thereby saving them the capital expense and necessity of acquiring the technical expertise and management capacity to operate their own connections to other carriers.[3] The existence of this in-place capability allows competitors such as CLECs and CMRS providers

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[3] Other entities, such as subsidiaries of AT&T, Worldcom, Southern New England Telephone, Sprint, GTE, and the RBOCs offer SS7 signaling network services in competition with Illuminet.

to enter the market quickly, because the necessary SS7 functionality is in place.[4] Illuminet's SS7 network, the largest network in the United States unaffiliated with a carrier, currently consists of 14 strategically located mated pairs of signal transfer points. Eight of these pairs are owned by Illuminet, and six are obtained through capacity leases. The network is connected to 230 LATAs either directly or through a RBOC gateway. Illuminet's more than 900 customers, including ILECs, CLECs, IXCs, CMRS providers and ISPs, are connected to its network by approximately 2,700 access links and 950 signaling points.

D. Illuminet's Data Base Services

Intelligent network services encompass a number of database query functions, the most significant of which are local number portability, line information database access and transport, toll-free database access and transport and caller identification or calling name delivery access and transport. Each of these services uses the SS7 network to access databases maintained by Illuminet and others.

Local number portability allows a telephone subscriber to switch local service providers while keeping the same telephone number. In order to complete a call to a telephone number in an area where local number portability has been implemented, a carrier must conduct a simultaneous database query to route the call correctly. Illuminet manages interactions with number portability databases and provides database queries on a call-by-call basis, thereby allowing carriers to deploy local number portability without the high cost of building their own infrastructure. Although wireless carriers are not now required to port telephone numbers, they

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[4] Illuminet's service offerings are further described in the materials enclosed as Appendix B and on its website: www.illuminet.com/products.

are responsible for routing ported telephone numbers when completing calls to ported areas. Illuminet provides wireless carriers with this routing information today.

Illuminet's local number portability services include: (1) service order administration, which gives carriers online access to manage portability information, send that information to the appropriate national Number Portability Administration Center and retrieve information about what actions other service providers may have taken; (2) a local service management system that is the hardware and software database platform necessary to manage customer call routing information; (3) data access to the appropriate local number portability service control point for the information necessary to complete a call; and (4) wireless number portability. The Illuminet local number portability service offers integrated, turnkey management of local number portability databases, a single interface to all of the seven Number Portability Administration Centers in the United States and 24 hour a day, seven day a week technical support.

Line information databases are developed and maintained by telecommunications carriers to store information about their subscribers necessary to provide enhanced services such as validating telephone numbers and billing information. For example, when a caller tries to bill a call with a calling card, the local carrier where the call is initiated sends a query over the SS7 network. The SS7 network then determines the appropriate database to validate the card number, routes the information to the switch that analyzes the response and determines how to treat the call. Through its SS7 network, Illuminet offers high-speed nationwide access to all of the line information data bases in the United States for purposes such as validating calling card, collect and third party billed calls. Illuminet also manages and operates it own database containing over 32 million line information records. The Illuminet line information database services include: (1)

fraud protection features, such as usage monitoring, auto-deactivation, lost and stolen card service and domestic restrictions to fight international calling card fraud; and (2) high capacity and reliability, fully meeting industry standards for call processing throughput, storage volume capacity, fault tolerance and redundancy.

The Illuminet SS7 network provides access to all toll-free numbers in the country for call routing. Illuminet also offers calling name database access, which allows carriers to query many regional Bell operating companies and major independent telephone carriers and reduces the "name not available" messages that customers receive. Illuminet also operates a database for storage of ILEC, CLEC and wireless calling name records.

E. OSS

Illuminet's OSS Interconnection Services (OIS) enables the electronic exchange of information between Service Providers (CLECs, IXCs, ITCs) and their Trading Partners (ILECs, RBOCs, IXCs). The Interconnection applications that Illuminet provides include PreOrder, Local Service Request (LSR), Access Service Requests (ASR), Primary Interexchange Carrier / Customer Account Record Exchange (PIC/CARE) and E911.

Illuminet's offering not only automates the process but also becomes the facilitator between the two parties from a customer service standpoint as well as exchanging and validating transactions. Illuminet has built a nationwide Trading Partner connectivity network to exchange transactions between Service Providers and their Trading Partners. Service Providers can come to Illuminet and exchange "interconnection" transactions such as PreOrder and LSR through one application, one provider (Illuminet) to all major Trading Partners.

II ACCESS BY ALL CARRIERS TO COST EFFECTIVE SIGNALING SYSTEMS, DATA BASES AND OSS SYSTEMS IS NECESSARY TO SUSTAIN AND GROW A COMPETITIVE ENVIRONMENT

A. The ability of competitive carriers to participate in the marketplace would be impaired without access to signaling systems and data bases on a cost-effective basis.

As the *UNE Remand Order* correctly describes at length, no carrier can hope to compete in the communications marketplace if it cannot interface with other carriers' out-of-band signaling systems and data bases.[5] This conclusion is consistent with the discussion in Section I, above, of the essential role SS7 signaling systems and related data bases play in the operation of the Public Switched Network. The construction and operation of a stand-alone SS7 signaling system and the data bases necessary for provision of many services is a complex and very capital intensive undertaking which may serve as a barrier to entry for smaller firms. For these new entrants and smaller entities, it is necessary that alternative signaling and data base providers, or both be available to minimize the capital expense and technical expertise requirements for participation in the rapidly evolving public switched network.

B. Illuminet leaves to its customers and other carriers the question of whether their ability to compete would be impaired if the requirement for providing signaling and data base access on an unbundled network element basis were rescinded.

Illuminet's objective is to ensure that high quality, reliable signaling and data base services are available to its customers virtually anywhere in the country. Nevertheless, without access to ILEC signaling and data bases on an unbundled network element basis, some carriers may be unable to use the services of Illuminet or other alternative suppliers, or may have other

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5 *UNE Remand Order* at 3869.

valid reasons why their ability to compete will be impaired. These carriers are best able to explain their situation to the Commission, and Illuminet cannot, and should not, speak for them. To the extent there are issues raised by the Comments which require further elaboration, Illuminet will submit Reply Comments or be available to the Commission as a resource.

C. The OSS Interconnection Process Should include Standardized Pre-Order Functionality

The design and operation of OSS systems by Bell Operating Companies has been among the most contentious interconnection issues and has been a critical issue in many state and FCC Section 271 proceedings. It is certainly among the most complex aspects of the implementation of the 1996 Act. Unfortunately, Illuminet has learned through its efforts to assist carriers in the process that the practices of some market participants may have made it more complex than necessary. A ready example is the pre-ordering process, which has substantial variations around the country. The process could be shortened, simplified, and made less costly for all concerned, including the RBOCs, if the Commission were to require provision of standardized pre-order functionality, including service availability information on high capacity loops, prior to the ordering step. The testing process is the most time consuming part; depending on the carriers involved, it may take a week or months to complete. Adoption of standardization would enhance competition and quicken the pace of deployment of advanced service.

III CONCLUSION

As the leading independent provider of signaling and data bases services, Illuminet has provided the information in these comments in order that the Commission may be better informed as to the specifics of the market as it reevaluates the unbundled network element rules. Illuminet's signaling and data base services will continue to make a significant contribution to the development of a competitive telecommunications marketplace. Illuminet takes no position as to whether the Commission should continue the existing rules. The Commission should carefully consider the comments of all carriers to ensure that their ability to compete will be unimpaired. In addition, the Commission should ensure open access to signaling and data base services for SS7 network providers of the carrier's choice. Finally, Illuminet recommends that the Commission reexamine this question at the next triennial review.

Respectfully submitted

Illuminet, Inc., a VeriSign Company

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Attachments

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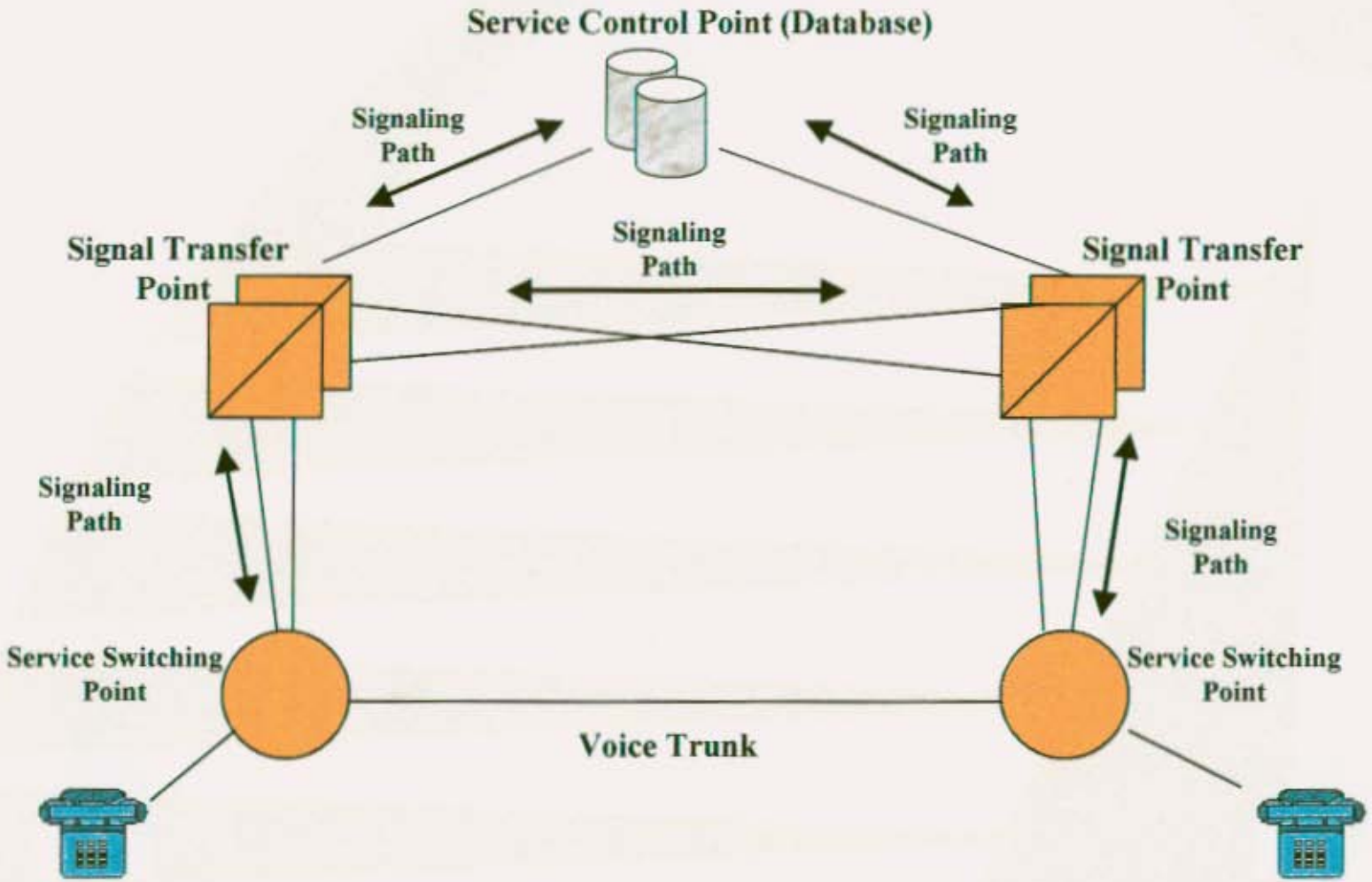
SS7 Network Architecture



ILLUMINET

TELECOM SERVICES

illuminet

Adding Value to Networks

Illuminet has developed a complete line of valuable advanced services for communications service providers. All of our services are designed to help make telecommunications more powerful, easier to use and affordable.

Illuminet Wireline Services

NETWORK SERVICES

SS7 Network Connectivity: Convenient access to the largest SS7 network in North America not affiliated with a major carrier. SS7 is the cornerstone for advanced call routing, validation, and management services. Interconnection is available via point-to-point SS7, Frame Relay and TALI-IP.

ISUP Trunk Signaling: ISUP replaces in-band signaling so information for call setup and tear-down is carried on out-of-band data links resulting in call completion that appears instantaneous to end-users. ISUP also allows for a full range of Intelligent Network services.

TCAP CLASS Messaging: Switch-to-switch transport of TCAP messages for advanced CLASS features such as automatic callback and automatic redial.

Internet Offload Signaling: A cost-effective alternative for routing dial-up Internet traffic and managing ISP infrastructure by combining Inter-Machine Trunks and Remote Access Servers with the efficiency of an Illuminet owned and operated softswitch and SS7 signaling.

Total Network Knowledge: Detailed reports for wireline and wireless carriers based on call detail records (CDRs) that provide visibility on every call from setup through termination. Standard or custom report packages provide detailed, easy-to-read analyses of network usage.

DATABASE SERVICES

Calling Name Database: Stores end-user name information for Calling Name (CNAM) Delivery service for wireline and wireless carriers. Carrier/provider pays no setup or storage fees, but receives compensation for third-party queries to its end-user data. Available for both wireline and wireless service providers.

Calling Name Delivery Access and Transport: SS7 connectivity to all available CNAM Databases for nationwide name delivery for wireline and wireless carriers. Carriers may access Illuminet's city/state database for information when names are not accessible.

Line Information Database (LIDB): Stores end-user line information for call validation and fraud control. Carrier/provider pays no setup or storage fees, but receives compensation for third-party queries to its end-user data. Illuminet provides expert data management including 24-hour electronic updating and emergency service.

LIDB Access and Transport: Provides access to all LIDBs in the U.S. for fast, accurate call validation via Illuminet's SS7 network.

Number Portability Service Order Administration (SOA): NP SOA handles service provider order entry and provisioning of ported numbers from any and all Metropolitan Statistical Areas (MSA) with any Number Portability Administration Center (NPAC). It interfaces with all the NPACs, and features convenient Web-based access and affordable usage-based pricing.

Number Portability Data Access: Enables network transport routing of all queries to nationwide NP databases including Location Routing Numbers (LRN) information for ported number identification and 10-digit Global Title Translation (GTT).

Toll-free Database Access: Allows local carriers to complete 8XX calls by accessing Illuminet's database for 8XX Carrier Identification Codes (CIC). Provides CIC routing instructions for nationwide toll-free calling and additional call routing instructions for geographic routing and time-of-day routing.

Call Management Services: A suite of services allowing subscribers control over home and business phone calls. Users can restrict incoming calls, block outgoing toll calls, and manage all outgoing calls through an easy-to-use web interface.

INTERCONNECTION SERVICES

OSS Interconnection Services: Enables LECs to interconnect with their trading partners for the electronic exchange of external Operations Support System transactions, such as LSR, Pre-Order, ASR and PIC/CARE. Manages those transactions for the LEC, eliminating manual processes and reducing overhead costs and reject rates.

0+ and 1+ Toll Clearinghouse: Enables LECs and IXCs to consolidate long-distance charges on customers' local bills for streamlined billing and enhanced customer care.

Payphone Compensation: Allows LECs who own payphones to earn extra revenue with commissions from AT&T and dial-around compensation from the National Payphone Clearinghouse (NPC).

Illuminet Wireless Services

NETWORK SERVICES

SS7 Network Connectivity: Convenient access to the largest SS7 network in North America not affiliated with a major carrier. SS7 is the cornerstone for advanced call routing, validation, and management services. Interconnection is available via point-to-point SS7, Frame Relay and TALI-IP.

ISUP Trunk Signaling: ISUP replaces in-band signaling so information for call setup and tear-down is carried on out-of-band data links resulting in call completion that appears instantaneous to end-users. ISUP also allows for a full range of Intelligent Network services.

IS-41 Network Transport: SS7 connectivity solutions for seamless, nationwide cellular and PCS roaming, including call validation and automatic call delivery throughout 25 countries in North, South, Central America and the Caribbean.

Roamer View: Provides visibility to all IS-41 roamer validation messages and PIN attempts, giving carriers ability to monitor all roamer activity in their service area, as well as roamer activity in other carriers' markets.

DATABASE SERVICES

Calling Name Database: Stores end-user name information for Calling Name (CNAM) Delivery service for wireline and wireless carriers. Carrier/provider pays no setup or storage fees, but receives compensation for third-party queries to its end-user data. Available for both wireline and wireless service providers.

Calling Name Delivery Access and Transport: SS7 connectivity to all available CNAM Databases for nationwide name delivery for wireline and wireless carriers. Carriers may access Illuminet's city/state database for information when names are not accessible.

CLEARINGHOUSE SERVICES

Settlement and Exchange Service: A comprehensive wireless clearinghouse solution featuring an easy-to-use Web-based reporting system to track and analyze a carrier's position with roaming partners throughout the world.

PREPAID SERVICES

Prepaid Services: SmartPay®, iRoam℠ and American Roaming Network℠ are account-based, real-time prepaid services that allow prepaid subscribers to enjoy the same roaming and calling plan features as regular post-paid customers.

INTERNATIONAL ROAMING

Pan-American Roaming Consortium (PARC): Membership in the Pan-American Roaming Consortium includes a roaming footprint that covers markets in over 25 countries through one roaming agreement with Illuminet. PARC includes roaming agreements, bi-monthly technical updates, multi-lingual services and Web support.

Industry Relations Programs

WIRELESS AND WIRELINE BUSINESSES

Alliance Program: A fast, cost-effective way to introduce new products and services into the tele-communications market by leveraging Illuminet's nationwide signaling infrastructure, expertise and technology.

Interoperability Certification Program: A program for testing and certification that the a product or service is suitable for interconnection to the Illuminet SS7 network.

Consultant Liaison Program: A mutual referral network and sounding board for business that develop new solutions that will best meet the needs of communication providers today.

For more information: please contact your Illuminet Account Manager or our information center at 888.655.4636, or visit www.illuminet.com.

Adding Value to Networks: A pioneer in SS7 and Intelligent Network services since the 1980s, Illuminet offers a broad range of advanced connectivity, signaling and database solutions. Telecommunications carriers using legacy, wireless and next-generation networks rely on Illuminet's independent service bureau to help them interconnect, operate efficiently and compete effectively. In addition to enabling today's essential telecom services, Illuminet is working to realize the value of converged communications networks for the future.

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